Sjöfartsverket

INFORMATIONSBLAD NR 13/27.9.1999

ISAVGIFTSKLASSBESTÄMMELSERNA 1985

Sjöfartsverket har genom ett beslut av den 7 september 1999 fogat en ny underpunkt 3.3 till punkt 3 i bilaga I till isavgiftsklassbestämmelserna av den 2 september 1985. Underpunkt 3.3 gäller nya krav på maskineffekt i isavgiftsklasserna IA och IA Super räknat från den 1 januari 2001.

Beslutet träder i kraft den 1 oktober 1999. Texten till bilaga I underpunkt 3.3 finns endast på engelska.

Isavgiftsklassbestämmelserna 1985 är publicerade i Sjöfartsverkets informationsblad nr 11/2.9.1985 och bilaga III till bestämmelserna i informationsblad nr 2/27.1.1986. De ändringar som gjorts i isavgiftsklassbestämmelserna den 25 januari 1988, den 17 september 1992 och den 31 januari 1995 har publicerats i informationsblad nr 4/25.1.1988, 10/26.10.1992 resp. 6/1.2.1995.

En finsk-, svensk- och engelskspråkig utgåva av isavgiftsklassbestämmelserna 1985 kan beställas från Sjöfartsverkets publikationsförsäljning till priset 31 mk (inkl. moms).

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SJÖFARTSVERKET	FÖRESKRIFT	Datum: 7.9.1999 Dnr: 7/30/99

Innehåll:	Nya krav på maskineffekt i isavgiftsklasserna IA och IA Super räknat från 1.1.2001
Normgivnings-bemyndigande:	Förordningen om farledsavgift (1016/1983) 11 §
Målgrupper:	Sjöfartsnäringen och skeppsbyggnadsindustrin
Giltighetstid:	1.10.1999 – tills vidare
Ändrar:	Sjöfartsstyrelsens beslut om isavgiftsklassbestämmelserna 1985 2.9.1985, Dnr 2575/85/307 Till punkt 3 i bilaga I till beslutet har fogats en ny underpunkt 3.3: "Required engine output for ice classes IA and IA Super from 1.1.2001".

SJÖFARTSVERKETS BESLUT OM ÄNDRING AV BILAGA I TILL SJÖFARTSSTYRELSENS BESLUT OM ISAVGIFTSKLASSBESTÄMMELSER 1985

Givet i Helsingfors den 7 september 1999

Sjöfartsverket har
fogat en ny underpunkt 3.3 till punkt 3 i bilaga I till sjöfartsstyrelsens beslut om isavgifts-klassbestämmelser av den 2 september 1985 enligt följande:

Detta beslut träder i kraft den 1 oktober 1999.

Den nya underpunkten 3.3 i punkt 3 i bilaga I till isavgiftsklassbestämmelserna har notifierats enligt Europaparlamentets och rådets direktiv 98/34/EG, sådant det lyder ändrat genom direktiv 98/48/EG.

Helsingfors den 7 september 1999

Heikki Valkonen
sjösäkerhetsdirektör

Gunnar Edelmann
byråchef

BILAGA I

REGLER FÖR FÖRSTÄRKNING OCH KONSTRUKTION AV FARTYG FÖR GÅNG I IS

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3. Maskineffekt (ny underpunkt 3.3 fogad genom beslut 7.9.1999 Dnr 7/30/99)

3.3 Required engine output for ice classes IA and IA Super from 1.1.2001

3.3.1 Definitions

The dimensions of the ship, defined below, are measured on the maximum ice class draught of the ship as defined in paragraph 2.1.

L = length of the ship on the waterline [m]

L_{BOW} = length of the bow, fig. 5 [m]

L_{PAR} = length of the parallel midship body [m], fig. 5

B = maximum breadth of the ship [m]

T = maximum ice class draught of the ship [m] according to 2.1

A_{wf} = area of the waterline of the bow [m^2], fig. 5

α = the angle of the waterline at B/4 [deg], fig. 5

φ_1 = the rake of the stem at the centreline [deg], fig. 5

φ_2 = the rake of the bow at B/4 [deg], fig. 5

D_P = diameter of the propeller [m]

H_M = thickness of the brash ice in mid channel [m]

H_F = thickness of the brash ice layer displaced by the bow [m]

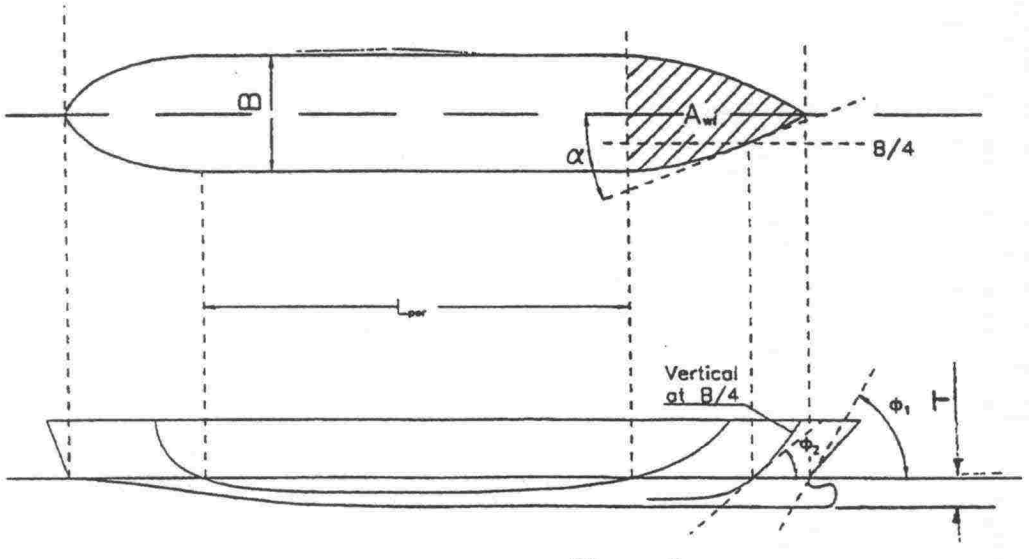

Figure 5

3.3.2 New Ships

To be entitled to ice class IA or IA Super, a ship the keel of which is laid or which is at a similar stage of construction on or after 1 January 2001 shall comply with the following requirements regarding its engine output.

$$P = K_e \frac{(R_{CH}/1000)^{3/2}}{D_P} [kW]; \text{ where:}$$

K_e shall be taken as follows:

Propeller type or machinery	CP or electric or hydraulic propulsion machinery	FP propeller
1 propeller	2,03	2,26
2 propellers	1,44	1,6
3 propellers	1,18	1,31

R_{CH} is the resistance of the ship in a channel with brash ice and a consolidated layer:

$$R_{CH} = C_1 + C_2 + C_3(H_F + H_M)^2\left(B + 1{,}85H_F - \frac{2H_F}{\tan\psi}\right)(0{,}15\cos\varphi_2 + \sin\psi\sin\alpha) + C_4 L_{PAR} H_F^2$$

$$+ C_5\left(\frac{LT}{B^2}\right)^3 \frac{A_{wf}}{L} [N]$$

$$H_F = 0{,}26 + (H_M B)^{0,5}$$

$H_M = 1{,}0$ for ice classes IA and IA Super

C_1 and C_2 take into account a consolidated upper layer of the brash ice and can be taken as zero for ice class IA.

For ice class IA Super:

$$C_1 = f_1 \frac{BL_{PAR}}{2\frac{T}{B}+1} + (1 + 0{,}021\varphi_1)(f_2 B + f_3 L_{BOW} + f_4 B L_{BOW})$$

$$C_2 = (1 + 0{,}063\varphi_1)(g_1 + g_2 B) + g_3\left(1 + 1{,}2\frac{T}{B}\right)\frac{B^2}{\sqrt{L}}$$

For a ship with a bulbous bow, φ_1 shall be taken as 90°.

$f_1 = 23$ N/m^2	$g_1 = 1530$ N
$f_2 = 45{,}8$ N/m	$g_2 = 170$ N/m
$f_3 = 14{,}7$ N/m	$g_3 = 400$ N/m^{1,5}
$f_4 = 29$ N/m^2	

$C_3 = 845$ kg/(m^{2}s^2)
$C_4 = 42$ kg/(m^{2}s^2)
$C_5 = 825$ kg/s^2

$$\psi = \arctan\left(\frac{\tan\varphi_2}{\sin\alpha}\right)$$

The following shall apply: $20 \geq \left(\frac{LT}{B^2}\right)^3 \geq 5$

3.3.3 Existing ships

To be entitled to ice class IA or IA Super a ship the keel of which is laid or which is at a similar stage of construction before 1 January 2001 shall comply with the requirements in section 3.3.2 above or the alternative requirements of this section by:

- 1 January 2005
- 1 January in the year when 20 years has elapsed since the year the ship was delivered, whichever occurs the latest.

When, for an existing ship, values for some of the hull parameters required for the calculating method in section 3.3.2 are difficult to obtain, the following alternative formulae can be used:

$$R_{CH} = C_1 + C_2 + C_3(H_F + H_M)^2(B + 0{,}658H_F) + C_4 L H_F^2 + C_5\left(\frac{LT}{B^2}\right)^3 \frac{B}{4}[N]$$

For ice class IA C_1 and C_2 can be taken as zero. For ice class IA Super, ship without bulb:

$$C_1 = f_1 \frac{BL}{2\frac{T}{B}+1} + 1{,}84(f_2 B + f_3 L + f_4 BL)$$

$$C_2 = 3{,}52(g_1 + g_2 B) + g_3\left(1 + 1{,}2\frac{T}{B}\right)\frac{B^2}{\sqrt{L}}$$

For ice class IA Super, ship with bulb, C_1 and C_2 shall be calculated as follows:

$$C_1 = f_1 \frac{BL}{2\frac{T}{B}+1} + 2{,}89(f_2 B + f_3 L + f_4 BL)$$

$$C_2 = 6{,}67(g_1 + g_2 B) + g_3\left(1 + 1{,}2\frac{T}{B}\right)\frac{B^2}{\sqrt{L}}$$

$f_1 = 10{,}3$ N/m^2	$g_1 = 1530$ N
$f_2 = 45{,}8$ N/m	$g_2 = 172$ N/m
$f_3 = 2{,}94$ N/m	$g_3 = 400$ N/m$^{1{,}5}$
$f_4 = 5{,}8$ N/m^2	

$C_3 = 460$ kg/(m^{2}s^2)
$C_4 = 18{,}7$ kg/(m^{2}s^2)
$C_5 = 825$ kg/s^2

The following shall apply: $20 \geq \left(\frac{LT}{B^2}\right)^3 \geq 5$

The Administration of Sweden and Finland may, however, grant an existing ship its original ice class even in case it does not comply with the requirements above, if it regularly has called at ports in the respective country in the winter season and on the condition that the experience of the performance of the ship in ice has been satisfying to the Administration in question.

3.3.4 Other methods of determining K_e or R_{CH}

The Administration may for an individual ship, in lieu of the K_e or R_{CH} values defined above, approve the use of K_e values based on more exact calculations or R_{CH} values based on model tests. Such an approval will be given on the understanding that it can be revoked if experience of the ship's performance in practice motivates this.